

What is claimed is:

1. A fluorescent lamp comprising:
a first substrate;
a second substrate which is arranged so as to face said first substrate;
a discharge gas which is sealed between said first substrate and said second
substrate; and
a plurality of discharge electrodes which are arranged on said first substrate and/or
said second substrate,
wherein said fluorescent lamp emits light by causing electric discharge in different
areas alternated in accordance with voltages applied to said plurality of discharge
electrodes.

2. A fluorescent lamp unit comprising:
a fluorescent lamp according to claim 1; and
a driving circuit which drives said fluorescent lamp by applying drive voltages to
said discharge electrodes of said fluorescent lamp.

3. The fluorescent lamp unit according to claim 2, wherein:
said plurality of discharge electrodes include a group of first discharge electrodes.
and a group of second discharge electrodes; and
said driving circuit repeats a first step and a second step, the first step causing
5 electric discharge in first discharge areas between said first discharge electrodes and said
second discharge electrodes by applying a voltage having a negative polarity to said first
discharge electrodes and applying a voltage having a positive polarity to said second
discharge electrodes, and the second step causing electric discharge in second discharge
areas which are different from said first discharge areas at least partially and which are
10 between said first discharge electrodes and said second discharge electrodes by applying a voltage
having a positive polarity to said first discharge electrodes and applying a voltage
having a negative polarity to said second discharge electrodes.

4. The fluorescent lamp unit according to claim 2, wherein:
said plurality of discharge electrodes include a group of first discharge electrodes
and a group of second discharge electrodes; and
said first discharge electrodes and said second discharge electrodes respectively
5 have projections, and said projections of said first discharge electrodes and said
projections of said second discharge electrodes are arranged so as not to face said
projections of the other group of discharge electrodes.

5. The fluorescent lamp unit according to claim 4, wherein
said driving circuit applies drive voltages having polarities which are changed
oppositely from each other to said first discharge electrodes and said second discharge
electrodes.

6. The fluorescent lamp unit according to claim 4, wherein
both of said first discharge electrodes and said second discharge electrodes are
arranged on said first substrate, or said first discharge electrodes are arranged on said first
substrate and said second discharge electrodes are arranged on said second substrate.

7. The fluorescent lamp unit according to claim 4, wherein
in a case where a voltage having a negative polarity is applied to said first discharge
electrodes and a voltage having a positive polarity is applied to said second discharge
electrodes, electric discharge is caused in first discharge areas which are between said
5 projections of said first discharge electrodes and said second discharge electrodes, and in
a case where a voltage having a positive polarity is applied to said first discharge
electrodes and a voltage having a negative polarity is applied to said second discharge
electrodes, electric discharge is caused in second discharge areas which are different from
said first discharge areas at least partially and which are between said projections of said
10 second discharge electrodes and said first discharge electrodes.

8. The fluorescent lamp unit according to claim 2, wherein:
said plurality of discharge electrodes include a group of first discharge electrodes, a

group of second discharge electrodes, and a group of third discharge electrodes; and
said driving circuit repeats a first discharge step and a second discharge step, the
5 first discharge step causing electric discharge in first discharge areas between said first
discharge electrodes and said second discharge electrodes by applying a drive voltage of a
positive potential to one of the groups of said first discharge electrodes and second
discharge electrodes and applying a drive voltage of a negative potential to the other of
the groups of said first discharge electrodes and second discharge electrodes, and the
10 second discharge step causing electric discharge in second discharge areas which are
different from said first discharge areas at least partially and which are between said first
discharge electrodes and said third discharge electrodes by applying a drive voltage of a
positive potential to one of the groups of said first discharge electrodes and third
discharge electrodes and applying a drive voltage of a negative potential to the other of
15 the groups of said first discharge electrodes and third discharge electrodes.

9. The fluorescent lamp unit according to claim 2, wherein:

said plurality of discharge electrodes include a group of first discharge electrodes, a
group of second discharge electrodes, and a group of third discharge electrodes;

said first discharge electrodes and said second discharge electrodes are arranged on
5 said first substrate, and said third discharge electrodes are arranged on said second
substrate; and

the group of said second discharge electrodes and the group of said third discharge
electrodes respectively have projections which are arranged so as not to overlap with said
projections of the other group.

10. The fluorescent lamp unit according to claim 9, wherein

said third discharge electrodes are arranged on said second substrate so as to almost
face said second discharge electrodes.

11. The fluorescent lamp unit according to claim 9, wherein

said driving circuit applies a drive voltage of a negative potential to said second

discharge electrodes and said third discharge electrodes alternately, and while applying a drive voltage of a negative potential to said second discharge electrodes or said third discharge electrodes, applies a drive voltage of a positive potential to said first discharge electrodes.

12. A liquid crystal display device comprising the fluorescent lamp unit according to claim 2 as a back light.

13. The liquid crystal display device according to claim 12, wherein said fluorescent lamp emits light by causing electric discharge in first discharge areas between said first discharge electrodes and said second discharge electrodes and in second discharge areas which are different from said first discharge areas at least partially and which are between said first discharge electrodes and said third discharge electrodes selectively in accordance with polarities of voltages applied to said plurality of discharge electrodes.

14. The liquid crystal display device according to claim 13, wherein said driving circuit applies to said plurality of discharge electrodes, drive voltages for turning on both of said first and second discharge areas when light intensity of said back light is at a maximum level, and drive voltages for turning off one of said first and second discharge areas when light intensity of said back light is at a minimum level.

15. The liquid crystal display device according to claim 12, wherein said driving circuit applies to said plurality of discharge electrodes, drive voltages for controlling said first and second discharge areas to emit light during 50% of a predetermined period, when light intensity of said back light is at a maximum level.

16. The liquid crystal display device according to claim 12, wherein said driving circuit applies to said plurality of discharge electrodes, drive voltages for turning on one of said first and second discharge areas and also for controlling the discharge areas which are turned on to emit light during 10% of a predetermined period, when light intensity of said back light is at a minimum level.

17. The liquid crystal display device according to claim 12, wherein
said driving circuit controls one of said first and second discharge areas to emit light
by causing electric discharge during 20% of a predetermined period, when light intensity
of said back light is at a minimum level.

18. The liquid crystal display device according to claim 12, wherein
said driving circuit controls both of said first and second discharge areas to emit
light by causing electric discharge during 100% of a predetermined period, when light
intensity of said back light is at a maximum level.

19. The fluorescent lamp unit according to claim 2, wherein
a reflection film is adhered to said first substrate.

20. The fluorescent lamp unit according to claim 2, wherein
said second or third discharge electrodes are made of a transparent conductive
material in a case where they are arranged on said second substrate.

21. A method of emitting light from a lamp (back light) in which a discharge gas
is sealed, and first and second discharge electrodes are formed, said method comprising:
causing electric discharge in first discharge areas between the first and second
discharge electrodes by applying a voltage having a negative polarity to the first discharge
electrodes and a voltage having a positive polarity to the second discharge electrodes, and
converting ultraviolet rays caused by the electric discharge into visible light through a
phosphor;
causing electric discharge in second discharge areas which are different from the
first discharge areas at least partially and which are between the first and second
discharge electrodes by applying a voltage having a positive polarity to the first discharge
electrodes and a voltage having a negative polarity to the second discharge electrodes,
and converting ultraviolet rays caused by the electric discharge into visible light through
the phosphor; and
controlling said causing electric discharge in the first discharge areas and said

15 causing electric discharge in the second discharge areas to be repeated.

22. A method of emitting light from a lamp (back light) in which a discharge gas is sealed, and first discharge electrodes, second discharge electrodes, and third discharge electrodes are formed, said method comprising:

causing electric discharge in first discharge areas between the first and second
5 discharge electrodes by applying a drive voltage of a positive potential to one of the first
and second discharge electrodes and a drive voltage of a negative potential to the other of
the first and second discharge electrodes, and converting ultraviolet rays caused by the
electric discharge into visible light through a phosphor;

causing electric discharge in second discharge areas which are different from the
10 first discharge areas at least partially and which are between the first and third discharge
electrodes by applying a drive voltage of a positive potential to one of the first and third
discharge electrodes and a drive voltage of a negative potential to the other of the first and
third discharge electrodes, and converting ultraviolet rays caused by the electric discharge
into visible light via the phosphor; and

15 controlling said causing electric discharge in the first discharge areas and said
causing electric discharge in the second discharge areas to be repeated.

23. The method of emitting light according to claim 21, wherein
in said controlling, it is controlled that drive voltages for turning on both of the first
and second discharge areas are applied to the first and second discharge electrodes when
light emission intensity is at a maximum level, and that drive voltages for turning off one
5 of the first and second discharge areas are applied to the first and second discharge
electrodes when light emission intensity is at a minimum level.

24. The method of emitting light according to claim 22, wherein
in said controlling, it is controlled that drive voltages for turning on both of the first
and second discharge areas are applied to the first to third discharge electrodes when light
emission intensity is at a maximum level, and that drive voltages for turning off one of the

5 first and second discharge areas are applied to the first to third discharge electrodes when light emission intensity is at a minimum level.

25. The method of emitting light according to claim 21, wherein in said controlling, it is controlled that drive voltages for turning on one of the first and second discharge areas and for controlling the discharge areas which are turned on to emit light during 10% of a predetermined period are applied to the first and second 5 discharge electrodes when light intensity of the back light is at a minimum level.

26. The method of emitting light according to claim 22, wherein in said controlling, it is controlled that drive voltages for turning on one of the first and second discharge areas and for controlling the discharge areas which are turned on to emit light during 10% of a predetermined period are applied to the first to third discharge 5 electrodes when light intensity of the back light is at a minimum level.

27. The method of emitting light according to claim 21, wherein in said controlling, one of the first and second discharge areas are controlled to emit light by causing electric discharge during 20% of a predetermined period when light intensity of the back light is at a minimum level.

28. The method of emitting light according to claim 22, wherein in said controlling, one of the first and second discharge areas are controlled to emit light by causing electric discharge during 20% of a predetermined period when light intensity of the back light is at a minimum level.